

METHOD AND SYSTEM FOR AUTOMATED CONVERGENCE AND FOCUS

VERIFICATION OF PROJECTED IMAGES

ABSTRACT OF THE DISCLOSURE

5 A method and system that objectively measures the  
convergence and focus of a 2 or 3 spatial light modulator  
(SLM) projection display. The system uses five (5) CCD  
cameras and a frame grabber to store red, green, and blue  
(R-G-B) data from selected pixels located in the corners  
and center of the projector's field-of-view. The  
10 horizontal and vertical locations for the R-G-B pixels at  
each of the five locations is determined and the delta  
( $\Delta$ ) displacement of the green and blue pixels, relative  
to the reference red pixel, is calculated and used to  
converge the image. The optical focus of the system is  
15 also determined using a Fast Fourier Transform (FFT).  
The FFT is performed on this same data and a power  
spectrum summation beyond the first minima is determined.  
The focus is then adjusted to maximize this value.

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